DOCUMENT RESUME

ED 428 716 IR 019 377

AUTHOR Rodd, Jillian; Coombs, Steven
TITLE Distance Learning with a Difference: Using the Internet To Deliver Higher Education.
PUB DATE 1998-06-00
NOTE 8p.; In: ED-MEDIA/ED-TELECOM 98 World Conference on Educational Multimedia and Hypermedia & World Conference on Educational Telecommunications. Proceedings (10th, Freiburg, Germany, June 20-25, 1998); see IR 019 307.
PUB TYPE Reports - Evaluative (142) -- Speeches/Meeting Papers (150)
EDRS PRICE MF01/PC01 Plus Postage.
DESCRIPTORS *Computer Assisted Instruction; *Computer Mediated Communication; *Computer Software Development; *Courseware; *Distance Education; Educational Technology; Foreign Countries; Higher Education; Information Technology; Masters Programs; Program Evaluation; Program Implementation; Student Attrition; Student Surveys; Teleconferencing; *World Wide Web
IDENTIFIERS Learning Environments; University of Plymouth (England); Virtual Classrooms; Web Sites

ABSTRACT

This paper reviews the development and delivery of a higher education module as part of the University of Plymouth's (England) Integrated Masters Programme (IMP) through the Rural Area Training and Information Opportunities (RATIO) telematic centers. The aim of the project was to provid computer-supported solutions that could assist remote learners living in the southwest of England to access higher education as part of a technology-assisted distance education program. The module represented a shift from traditional educational delivery systems with the use of World Wide Web pages, e-mail, and videoconferencing. Out of the 16 participants who enrolled in the Masters module, four completed the learning sessions and two submitted final assignments. The mainly positive experiences of the remote tutor and the students in such an initiative and the implications for the use of the Internet for distance education are discussed. Sections of the paper cover: project aims; project implementation, including recruitment of participants, delivery of the module, and evaluation of the student and tutor experience; findings related to student attrition, a survey of students' previous experience with information technology, qualitative analysis of e-mail correspondence, and the personal reflective journal of the tutor; outcomes and discussion; and difficulties encountered. (Author/DLS)

****
* Reproductions supplied by EDRS are the best that can be made *
* from the original document. *
****

U.S. DEPARTMENT OF EDUCATION
Office of Educational Research and Improvement
EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)
☐ This document has been reproduced as received from the person or organization originating it.
☐ Minor changes have been made to improve reproduction quality.
• Points of view or opinions stated in this document do not necessarily represent official OERI position or policy.

Distance Learning with a Difference: Using the Internet to Deliver Higher Education

Dr. Jillian Rodd, University of Plymouth, Faculty of Arts and Education, UK
Email: j1rodd@plymouth.ac.uk
Dr. Steven Coombs, Nanyang Technological University, National Institute of Education, School of Education, Singapore
Email: coombss@nievax.nie.ac.sg

ED 428 716

Abstract: This paper reviews the development and delivery of a higher education module as part of the University of Plymouth's Integrated Masters Programme (IMP) through the Rural Area Training and Information Opportunities (RATIO) telematic centres. The aim of the project was to provide computer supported solutions that could assist remote learners living in the South West of England to access higher education as part of a technology assisted distance education programme. The module represented a shift from traditional educational delivery systems with the use of Internet web site pages, email and videoconferencing in its delivery. Out of the 16 participants who enrolled in the Masters module, four completed the learning sessions and 2 submitted final assignments. The mainly positive experiences of the remote tutor and the students in such an initiative and the implications for the use of the Internet for distance education are discussed.

PERMISSION TO REPRODUCE THIS MATERIAL HAS BEEN GRANTED BY
G.H. Marks
TO THE EDUCATIONAL RESOURCES INFORMATION CENTER (ERIC)

The key purpose of this project was to take advantage of the opportunities offered by the Rural Area Training and Information Opportunities (RATIO) initiative to create an experimental web site through which to offer a Masters degree module. Because it was considered that students who were interested in information technology might be attracted to such a format, it was decided to develop a module with high information technology (IT) content entitled 'IT for Personal Development and Project Management' into appropriate telematic course ware, capable of both dissemination and assessment through interactive student participation using the facilities at selected sites. Careful development of both a telematics quality policy and model needed to be identified in order to meet the underpinning academic task criteria for all Masters modules. These tasks require learning opportunities to enable learners to develop academic skills covering the following five assessment areas: critical review of a body of knowledge, data collection and analysis, developing practice through a project, reflecting on practice and making an argument. All of these areas are underpinned by deep criteria where the learner is expected to demonstrate abilities covering personal skills which involve research and investigation, organisation and preparation, appropriateness of medium and process, practical competence, coherence, legibility, inventiveness and independence of thought, understanding of relevant historical, critical and cultural contexts and critical evaluation. The challenge of this project was to ensure that the technology-assisted solutions developed were suited to fulfilling the learning requirements outlined above. This project aimed to field test the telematic resources developed with a small group of remote learners. The experiences of these remote learners were collected in order to evaluate the effectiveness of the technology adopted and the distance education delivery systems implemented. The identification, development and testing of a web-page authoring kit, suitable for practical university staff development, represented both an original contribution towards staff development. It also achieved viable solutions to some of the recently raised issues highlighted in the Higginson report regarding implementation of flexible distance education, information technology learning curricula and superhighway learning resources (Higginson, 1996). These issues have also been recognised in the European Union's recent white paper on education and training which has implemented a wide range of telematic-assisted learning projects (EU DGXII, 1995).

Aims

1. To develop a University of Plymouth Internet web facility for the Masters programme, capable of telematic organisation of flexible distance learning packages;

IR019377

BEST COPY AVAILABLE

2. To pilot the conversion of the module 'IT for Personal Development and Project Management' into such an flexible distance learning package;
3. To develop flexible distance learning real-time interactive face-to-face solutions for seminars, tutorials etc., through RATIO video-conference centres across the region;
4. To evaluate the effectiveness of the flexible distance learning solutions developed in terms of key findings gleaned from involved staff and distance education participants, identifying key lessons learnt with consequent implications for teaching and learning in higher education.

The implementation of the project

The implementation of the module is described in three stages: the recruitment of participants, the delivery of the module and the evaluation of student and tutor experience.

1. The recruitment of participants.
Given that this project was an experimental initiative, it was advertised apart from the University's normal advertising for Master' programme. From this mail out to selected post graduate student groups and through and word of mouth, approximately 60 people requested additional information about the module. Twenty prospective students attended an Introduction and Induction evening with 16 people completing formal enrolment procedures. All of the students had appropriate entry qualifications for enrolment in the Integrated Masters Programme and were mature adults who were or had previously worked in education, training or related fields. Difficulties in obtaining access to suitable hard ware and venue sites were the reasons that four people did not complete enrolment. This factor proved to be significant in later drop outs from the module. During the course of the session, the 16 students were asked to complete a short questionnaire relating to previous IT experience in order to ascertain anticipated need for IT support during the module.

2. The delivery of the module
Once enrolled, the 16 students were provided with the module's world wide web address, user name and password to access the seven learning sessions. The module was authored in such a way to allow public access to some information but the learning sessions were protected by a user name and password. Students were asked to signal their participation in the content of the module by constructing an email of introduction about themselves for the tutors and fellow students. Shortly, after that, students were asked to respond to the tutor's email requesting details about their assignment. A distribution list was set up to facilitate communication between tutors and students. Students then were required to access and complete the learning sessions in their preferred venue, own time and at their own pace. The tutors encouraged students to communicate about difficulties encountered during the module and distributed email responses to frequently asked questions to the group members. Students were also encouraged to communicate with fellow students about their experiences encountered while undertaking the module, thereby encouraging the establishment of a support group. The learning sessions needed to be completed in sufficient time for students to prepare and submit an appropriate assignment by a set date. At least one videoconference session was planned during the delivery of the module. Numerous problems related to the delivery of the module emerged.

3. Evaluation of student and tutor experience
Project evaluation was carried out in a number of areas. Qualitative analysis of the following key areas was investigated:-
1. the ease and social pragmatics of developing a flexible distance learning package by university staff;
2. the extent to which the aims of the module were actually achieved through flexible distance learning assessment methods;
3. student attitudes regarding both participation and learning through a flexible distance learning delivery format. Interviews, personal and e-mail, coupled with post-module evaluation feedback reports were deployed;
4. tutor experience of, and attitudes to, teaching and delivering a module in this particular format via chronological recording of key personal learning events in a personal learning biography.

Research findings

Data were collected on student attrition, previous experience in using IT, email correspondence, personal reflections of the tutor as means of evaluation.

1. Student attrition

Student attrition was a major issue in the delivery of this distance learning module. In the four weeks following the Introduction and Induction evening, 50% (N=8) of the enrolled students withdrew from the module. The main reasons were associated with lack of accessibility to suitable hard ware and pressure from employment. The project was dependent upon the operation of RATIO centres throughout the south west of England. The delivery and installation of equipment for accessing the world wide web and to participate in videoconferences was running well behind schedule which meant that none of the RATIO centres were able to be used by students. Students then had to find alternative venues which proved extremely difficult and resulted in 5 students abandoning the module. Pressure from employment proved to be another factor in student attrition. A majority of the students worked in higher or further education as trainers. These sectors were and are experiencing major structural upheaval which resulted in three students having to take on additional responsibilities in order to retain their jobs. These students would have withdrawn from the module regardless of its mode of delivery.

During the next four weeks, another four students withdrew. Two students considered that their low level of competence with IT would result in their inability to successfully complete the module. One student who suffered from multiple disabilities withdrew because the University finally was unable to meet her need for a voice activated computer. The final student withdrew because he was returning to Cyprus for the summer and was not able to access suitable equipment in Cyprus which would permit him to meet the assignment deadlines. The remaining group of four students progressed through the learning sessions over a period of approximately four months. However, only two students completed the module by submitting and passing an action research assignment. The other two students were lecturers from a partner FE college who merely wanted to experience distance learning as a means of evaluating its suitability for FE courses. While they completed the requirements of the learning sessions, they were not prepared to put the effort required in submitting a rigorous post-graduate project assignment.

2. Survey of previous experience with IT

All of the original 16 students who enrolled in the module completed a short one page questionnaire which aimed to identify their previous experience with the type of technologies on which the module was based. The results revealed that 96.8% of the students were experienced in word processing, while 43.8% had experience with email, and 56.3% had experience with the Internet. Only 6.35% of the students had previous experience with videoconferencing. In relation to the venue where the module would be accessed, the workplace (50%) and home (25%) were specified by the majority of students. Other venues specified were the University's computer centre (12.5%) and various RATIO centres (12.5%). 68.75% of the students (N=11) indicated that they probably would use a combination of the above venues to participate in the module. Given that the RATIO centres were not fully operational during the module, two students eventually had to find other suitable venues. Finally, the students were asked to rate themselves in terms of their level of confidence for using IT on a four point scale (very confident, confident, unconfident, very unconfident). Half of the students (50%) reported that they felt 'confident', 43.75% (N=7) reported feeling 'unconfident' and one student reported feeling 'very confident' in using IT. Interestingly, only two students withdrew because of feelings of incompetence with using IT. These data suggest that student attrition mainly was associated with factors unrelated to lack of confidence in using IT.

3. Qualitative analysis of email correspondence

Email correspondence (and four telephone calls) generally related to technical and academic related problems. The biggest technical problems were related to obtaining the correct address for accessing the module on the world wide web and incorrect or changed email addresses. Unfortunately, following the Introduction and Induction evening when the module's address on the Internet was provided to students, it was decided by technical support staff from the University's Computer Services to change the address. Although inserting the new address into the home page rectified the problem, it resulted in considerable student confusion. The change of address was followed almost immediately by the University's system 'going down' for a couple of days, a situation for which the students had not been forewarned. In setting up the module on the Internet, technical staff from both the Faculty and Computer Services had been involved. It is important that one department only be responsible for 'webministration' services, especially for creating the address and setting the

password so that responsibility for coordination of all information may be disseminated to all system users.

Owing to a lack of central webministration service, the distance education learners were not adequately informed about any vital system changes, such as incorrect and changes in email addresses. In the early stage of the module's delivery, one of the tutor's took up employment in Singapore resulting in a change of email address. Some students who had limited understanding about the precise nature of email addresses provided incorrect contact details. One student changed her email address during the module and provided incorrect details which took some time to unravel. Consequently, the distribution lists became incorrect at frequent intervals which resulted in students not receiving replies to emails or emailed correspondence. As initial technical problems were overcome and the student group decreased to four, the type of technical query changed from simple problems as described above to more complex problems, such as encoding and decoding email attachments between different systems, accessing different web sites, creating and saving of graphics as GIF files and word processed material so that they can be sent as split text and graphics and, queries related to the setting up of and preparation for a videoconference. It is essential that students have immediate access to technical support for such a technology-dependent learning system.

Because of tutor unavailability due to holiday periods and absences related to other academic duties, some students reported concern about delays in responses to emailed correspondence. Students also could not be raised by tutors sometimes which created uncertainty about their continued participation in the module. It is important that all participants alert group members if they are going to be 'off line' for any period of time. A transparent communications protocol linked to webministration, administrative and technical support services, tutor academic support and distance learner participants are recommended as essential infra-structure for any expansion of this service. A range of academic queries were raised in student emails. These related mainly to definitions of academic terminology, requests for feedback on student work, questions about theoretical and methodological issues, requests for traditional printed resource materials, request for information about administrative and library matters, the use and value of reflection in academic work and other matters directly related to the academic content of the module. Where appropriate, the tutor's reply was distributed to all of the group members as were relevant suggestions and comments from students.

Although traditional written end of module evaluation could have been undertaken with the completing students, the small number of completing students made this less relevant. Instead, the two students who successfully completed all seven learning sessions and submitted an appropriate assignment were contacted personally to discuss their experiences, the strengths and weaknesses of distance learning. The general consensus was that there was more time and work associated with undertaking a module in this format than in traditionally delivery modes. While the students thought that they had learned a lot, they described some of the theoretical on line reading as 'heavy going'. The students thought that two demands were made on them: first, the learning of IT skills to enable them to undertake the distance learning module and second, the learning related to academic content requirements. The students recognised that there were initial 'teething problems' associated with technical aspects of the module but considered that these were overcome by the regular emails and encouraging personal support offered by the tutors. The lack of face to face interaction with the group was considered to be a disadvantage. It was thought that this aspect would have been overcome with videoconferencing. As it turned out, only one videoconference was able to be organised in which only one of the students could participate at the University due to technical and time difficulties. The other student linked up separately via her school's videoconferencing resource but all three venues could only communicate via point to point. A multi point bridge server was not available between the three venues, so three way communication was stymied. The tutors recognised that some of the students' problems with the module were associated with their inexperience in authoring telematic based course ware, that is disseminating appropriately formatted graphics and text files over the email Internet systems used. These problems are likely to be overcome in future distance learning packages.

4. Personal reflective journal of the tutor

The remote tutor identified and recorded a wide range of problems and successes associated with the delivery of this module, with the key issues as follows.

1. The lack of a distance learning systems protocol that delineates open support between the three core

user areas of on-line administration services, IT technical services and academic services. These were

mostly left to the on-line module tutor to sort out.

2. The lack of a user-friendly videoconference facility that could easily connect the tutor and the group
together for multi-point private conversations.
3. The need for a clear web etiquette and on-line protocol from which both distance learners and
module tutors can overcome the problems of remoteness and lack of face-to-face contact.
4. While the student attrition dropout from the module was high the completed projects were of a very
high standard and validated the academic value of accrediting community-based action research projects
via a university distance learning programme.

From these problems the tutor has recommended the following solutions towards any future expansion of the distance learning IMP. First, the creation of a webministration service to centrally co-ordinate the distance learning support service. That is, both a forum and intermediary through which the IMP distance learning modules may be administered. The service would include on-line registrations, dissemination of necessary regulations and user contact protocols, assistance with IT technical problems. The webministration coordinating facility would form the academic support infrastructure of a distance learning virtual faculty and could offer global access to the IMP. Second, the 'big' studio-based videoconference facility offered by providers such as PictureTel Corporation are considered to be inappropriate and inflexible to the distance learner's needs for an easy-access face-to-face solution. Instead, the tutor has recommended a desktop videoconference solution which offers server space for 'bridging' multi-point desktop videoconference sessions via the client-users own PC.

Outcomes and discussion

Several key benefits and outcomes stemmed from this project and included the following:
1. the development and running of a dedicated web site which included full interactive student participative features such as Internet e-mail;
2. the conversion of an existing module into suitable flexible distance learning format;
3. the identification and development of a suitable HTML editor which was capable of being used as a staff development authoring tool by current staff;
4. the piloting of videoconference resources as a means of satisfying the perceived face-to-face requirements underpinning delivery of a higher education programme;
5. a demonstration of applying telematics in the delivery of higher education programmes.

Although the final group of students was small, the quality of their submitted responses to the seven learning sessions and assignments demonstrated that the project had a significant impact on the quality of learning. The most important quality-related issue is that of improved student access to postgraduate professional training programmes. The students who completed the module would not have enrolled in a traditional delivery mode because of various commitments. Higher education learning opportunities were therefore realised through the medium of telematic assisted flexible distance learning in a geographically sparsely populated region, with consequent lessons and implications for similar programmes adopting the same model.

An important impact on the quality of learning was the creation of a flexible distance learning medium which promoted the ethos of student autonomy with regards to their own learning, thus underpinning the aims of effective adult learning and the deep learning criteria previously outlined. Good quality telematic assisted learning programmes, with proper higher education accredited status, can achieve Boud's vision of developing the educational qualities and personal skills that underpin the successful performance and capability of the autonomous learner (Boud, 1981). This is further underpinned by Harri-Augstein's and Thomas' notion of the self-organised learner (Harri-Augstein & Thomas, 1991), whereby an individual's learning capabilities can be enhanced through technology assistants which they refer to as an Intelligent Learning System. Coombs (1995) further elaborates this notion of an Intelligent Learning System in terms of a Knowledge Elicitation System, whereby, information technology-assisted learning is considered in terms of its interactive learning capability with an individual learner. It is therefore understood that the quality of learner-learning with an information technology software system can be explained in terms of the learner being able to systematically manage their own elicitations in the form of self-organised reflective construing experiences. From this perspective, knowledge is considered as being relative to the user - as learner - via focused information technology-assisted reflections, construed and elicited by the person in the form of meaningful Learning Conversations. Given this understanding of how information technology/telematic learning systems may impact upon the personal learning capability of the learner, coupled with the demands of higher education, such as

developing the learner's reflective skills, it can be seen that appropriate learning technologies could bring considerable benefits to outreach members of the community participating in a distance education scheme.

Additionally, the personal involvement of the tutor in developing his/her curriculum through an action research project is supported by educational critical thinkers such as Stenhouse (1975) and Elliot (1991) who support the notion of teacher as an experimenter of his/her curriculum. Evaluation of the on-going curriculum development experiences of the tutor involved in converting a module into an flexible distance learning format was a valuable staff development exercise. A reflective learning biography was kept as a means of project management review and evaluation of important lessons learnt, as experienced in real time, on the job.

The module chosen as a pilot for this project offered a diverse curriculum range which both embodied the spirit of the central IMP tasks and deep criteria, whilst lending itself towards the use of technology-assisted reflective tools. Clearly, the telematic media adopted, that is, Internet web pages and PictureTel videoconference facilities lent themselves to the central ethos of the module itself. This enabled participants to critically appraise information technology-assisted learning systems in terms of their ability to operate them successfully as knowledge elicitation systems. A central axiom of the module critically appraises information technology in terms of its ability to be used as a conversational learning tool that can be employed as a means of personal development. These IT reflective tools assist participants to carry out a small scale action research project from within their own social and working environment. Information technology project management techniques included the use of the Internet to research contemporary background information of a participant's subject/professional development field, e-mail to share research questions and concerns with project supervisors and other team members, spreadsheets for quantitative data analysis and graphical presentation and wordprocessing facilities to keep a computerised reflective log/account of key project events and submit the final assessment dissertation.

A key part of the module required one-to-one tutorials to negotiate the participants' project and discuss individual needs and assessment methods best suited to achieving the assessment task. Videoconferencing provided a means of giving this kind of support to distance learners but in practice proved to be impossible to implement owing to the unwieldy nature of studio based videoconference solutions such as PictureTel. However, PictureTel does provide the bonus of sharing an information technology task with a distance learner despite the fact that it was difficult to access and use. Therefore, it is possible to conduct interactive information technology software demonstrations and exercises from the module that currently involve the use of Excel and SPSS. However, a more user-friendly desk top videoconference system would allow for easier user access and is recommended for future use.

Difficulties Encountered

A number of obstacles to the development and delivery of the module were encountered by the tutor and students. For the tutor, lack of support in the administrative, library and technical areas, inadequate time allocation and resourcing for the development of the module and recognition by the university administration of the needs of a remote and/or home tutor were identified. For students, the major obstacle was accessing equipment to undertake the module tasks. Contrary to expectation, the RATIO centres were not resourced with the equipment necessary for students to undertake the module during the trial period. In addition, a student with multiple disabilities was not able to gain access to equipment which would have enabled her to undertake the module. Where alternative venues were identified, such as colleges, schools or home systems, the capacity of these systems could not always handle the demands of the technology. Some students found that the challenge of mastering the technology were greater than expected and thought that they could not handle both the technology and content together. However, most students reported that the major advantages of the module were working in their chosen venue, in their own time and at their own pace.

Conclusion

In conclusion, the key benefits of this project should impact upon those participating students drawn principally from the South West of England who wish to pursue professional development in Higher Education. Another key benefit is the staff development of all those involved in this project, including the participating project team, through personal experiences of innovative practice that leads to new and further pedagogical knowledge and skills. As a consequence of cross-institutional collaborative involvement, the RATIO partner institutions will clearly benefit in the future through

the perceived enhancement of their reputation as leaders in distance education, despite the set backs reported in this project. The general education profession will gain some valuable insights from this distance learning project which has made an original contribution impacting upon the management, theory and practice of teaching and learning in Higher Education.

References

Boud, D. (1981) *Developing Student Autonomy in Learning*. London: Kogan Page.

Coombs, S. (1995) *Design and Conversational Evaluation of an IT Learning Environment based on Self-Organised Learning*. Unpublished PhD thesis, London: Brunel University.

Elliot, J. (1991) *Action Research for Educational Change*. Milton Keynes: Open University Press

European Union DGXII (1995) *Teaching and Learning - Towards the Learning Society. European Union White Paper on Education and Training-* http://www.europa.eu.int/en/comm/dg22/lbhp.html

Harri-Augstein, R. & Thomas, (1991) *Learning Conversations*. London: Routledge

Higginson/FEFC (1996) *Report of the Learning and Technology Committee FEFC -* http://www.wwt.co.uk/fefcinfo/higg.html

Stenhouse, L (1975) *An Introduction to Curriculum Research & Development*. London: Heinemann